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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,813	11/15/2006	Marlene Moerth	083042-000000US	6928

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EXAMINER
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QIN, JIANCHUN

ART UNIT	PAPER NUMBER
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2837

MAIL DATE	DELIVERY MODE
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06/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/558,813	<b>Applicant(s)</b> MOERTH, MARLENE	
	<b>Examiner</b> JIANCHUN QIN	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/28/05</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Election/Restrictions***

1. Per Applicants' response dated 01/24/2007, a provisional election was made without traverse to prosecute new claims 41-50. Claims 1-40 originally presented are canceled by the Applicants without traverse.

### ***Specification***

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### ***Arrangement of the Specification***

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.

- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Please visit <http://pair-direct.uspto.gov> to retrieve any US references to see the format in formulating an application.

### ***Abstract of the Disclosure***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. Specifically, the Abstract of the Disclosure is objected to because of the following informalities: Please delete "(Fig. 1)" from the last line of the Abstract.

***Claim Objection***

5. Claims 41 and 50 is objected to because of the following informalities:

Claim 41, the abbreviations "WC/C", "WC", "CrC" and "CrN" need to be spelled out or expressed literally then followed by "(WC/C)", "WC", "CrC" or "CrN".

Claim 41 is objected to because it is unclear whether or not the phrases inside the parentheses are parts of the claim limitation.

Claim 50, the abbreviation "PVD" needs to be spelled out then followed by "(PVD)".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 41, 43, 44 and 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landell (U. S. Pat. No. 6124538) in view of Rogers et al. (U. S. Pub. No. 20020032073).

Regarding claim 41, Landell discloses accessory or component or actuating parts for or of musical instruments comprising said parts being made at least partially from titanium or a titanium alloy (Abstract), the titanium and the titanium alloy, respectively, being in a cast, forged or sintered form (cols. 3-4, lines 66-69; col. 5, lines 15-32 and

48-52; col. 6, lines 48-57) and the parts being coated with at least one hard layer, in the course of a physical application process (col. 4, lines 20-24; col. 5, lines 33-37 and 52-56).

Landell does not mention expressly: said titanium alloy is a titanium alloy GRADE 5 or from a titanium alloy having material number 3.7165 or 3.7164; said hard layer made of at least one of WC/C (tungsten carbide carbon), WC, CrC (chromium carbide) and CrN (chromium nitride).

In view of the teaching of Landell, one having ordinary skill in the art at the time the invention was made would be able to select a well known material, such as a titanium alloy GRADE 5, preferably TiAl6V4, or from a titanium alloy of material number 3.7165 or 3.7164, respectively, to form at least partially said parts for and of musical instruments, in order to make the parts lighter, more durable and resistant to marring than other materials (Landell, Abstract), since it has been held to be within the general skill of worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Furthermore, Rogers et al. teach coating musical instruments with at least one hard layer, made of WC/C (tungsten carbide carbon) and/or WC and/or CrC (chromium carbide) and/or CrN (chromium nitride) and/or have a surface coating made of titanium nitride (sections 0005-0006).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Rogers et al. in the invention of Landell in order to provide a highly durable and abrasion-resistant composite diamond-like carbon

coating with controllable color which is ideally suitable as a decorative coating on the musical instruments (Rogers et al., Abstract).

Regarding claims 43 and 44, Landell discloses: wherein the parts are subjected to a thermal treatment or are hardened thermally (cols. 5-6, lines 15-57); wherein said parts are prepared by machining (cols. 5-6, lines 15-57).

Regarding claims 46 and 47, Landell discloses: wherein the parts comprise at least one of: a fine tuner for string instruments, in particular the screw connection part and/or knurled nut and/or lever and/or knurled screw and/or microscrew thereof, a string ball, a tailpiece fastener and/or a fixing part for a tailpiece fastener, a wolf eliminator, in particular the screw sleeves thereof, a peg, preferably a peg for string instruments, in particular a peg shaft, a tuning peg, in particular for keyboard instruments, harp, zither, dulcimer and raffele, a mouthpiece for brass instruments, a bridge pin, in particular for keyboard instruments, a string for string instruments, a fret, in particular for plucked instruments, a sound piece for brass instruments and a bell mouth, respectively, for hooters, signal-horns or horns, a chin holder screw, in particular for violin and viola, a plectrum, in particular for plucked instruments, a mechanism for plucked instruments, in particular contrabasses, a trombone slide, a valve for brass instruments, a lamina, in particular for vibraphone or metallophone, a tongue for harmonicas, in particular accordions and mouth organs, and for musical clocks and automatic pianos, respectively, a sheet or tone sheet, respectively, preferably for woodwind instruments or saxophone, a bridge support, in particular for string instruments, a mute for string instruments, a bow winding for a string bow, an organ pipe, a face for a string bow, a

tailpiece or tailpiece sleeve, respectively, a thumb ring, a bottleneck, in particular for plucked instruments, a frog and/or a button for a string bow as well as a frog, a ring, a gusset or a button ring, a bell, a bassoon tube, a tuning fork, a tuning pipe, an endpin for string instruments, a button for string instruments, a bridge for plucked instruments, a saddle for plucked instruments, a tailpiece for string instruments, and valves for wind instruments (col. 6, lines 48-57); wherein the parts are entirely made from titanium or titanium alloy (Abstract; col. 6, lines 48-57).

Regarding claim 48, Landell does not mention expressly: wherein the GRADE 5 titanium alloy is TiA16V4.

In view of the teaching of Landell, however, one having ordinary skill in the art at the time the invention was made would be able to select a well known material, such as a titanium alloy GRADE 5, preferably TiA16V4, to form at least partially said parts for and of musical instruments, in order to make the parts lighter, more durable and resistant to marring than other materials (Landell, Abstract), since it has been held to be within the general skill of worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 49, Landell discloses: wherein the parts are coated with the at least one hard layer by depositing or applying the hard layer to the parts (col. 4, lines 20-24; col. 5, lines 33-37 and 52-56).



8. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landell in view of Rogers et al., as applied to claim 41 above, and further in view of Gartner et al. (U. S. Pat. No. 4659629).

Regarding claim 42, Landell discloses: wherein, for coloring, the surfaces of the parts are electroplated and/or coated with gold or anodized, respectively (col. 4, lines 20-24; col. 5, lines 33-37 and 52-56; col. 6, lines 58-65).

Landell in view of Rogers et al. do not mention expressly: wherein, for coloring, the surfaces of the parts are electroplated and/or coated with platinum, or rhodium, respectively.

Gartner et al. teach: electroplating and/or coating surfaces of magnesium alloys containing aluminum with platinum, gold or rhodium, respectively (col. 2, lines 17-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Gartner et al. in the combination of Landell and Rogers et al. in order to provide enriched surface coating to the surface to form a highly effective protective outer layer on the surfaces (Gartner et al., Abstract), and also to make it easier to color anodize the surfaces (Landell, cols. 2-3, lines 61-3).

9. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landell in view of Rogers et al., as applied to claim 41 above, and further in view of Murata et al. (U. S. Pat. No. 4507184).

Regarding claim 45, Landell in view of Rogers et al. teach the invention including the subject matter discussed above except: the titanium and the titanium alloy,

respectively, have a density of about 4.42 g/cm<sup>3</sup> and a tensile strength of at least 820 N/mm<sup>2</sup>.

Murata et al. teach articles made of titanium and titanium alloy, wherein the titanium and the titanium alloy have a high ratio of tensile strength to density.

In view of the teachings of Landell and Murata et al., it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the titanium and titanium alloy having an optimum value of the ratio of tensile strength to density such that the musical instrument made of that titanium and/or titanium alloy are of outstandingly small specific gravity, high corrosion resistance, and extremely fine ruggedness on the surface (Murata et al., col. 1, lines 14-29), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Landell in view of Rogers et al., as applied to claim 41 above, and further in view of Johansson et al. (U. S. Pat. No. 5320686).

Regarding claim 50, Landell in view of Rogers et al. do not mention expressly: wherein the physical application process comprises a PVD process.

Johansson et al. teach coating surfaces with at least one layer, which preferably are deposited or applied, respectively, in the course of a physical application process, in particular a PVD process (cols. 6-7, lines 58-2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Johansson et al. in the combination of

Landell and Rogers et al. in order to provide a highly effective and robust physical process to coat a surface (Johansson et al., col. 2, lines 6-43).

***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianchun Qin whose telephone number is (571) 272-5981. The examiner can normally be reached on 8am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. Q./

Examiner, Art Unit 2837

/Lincoln Donovan/

Supervisory Patent Examiner, Art Unit 2837